

## 510(k) Summary

**510(k) SPONSOR:** Vivorté, Inc.  
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Louisville, KY 40204  
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SEP 12 2013

**TRADE NAME:** Vivorté BVFTM

**COMMON NAME:** Calcium phosphate bone void filler; bone void filler

Product	Regulation and Description	Product Code	Device	Device Class
Vivorté BVFTM	21 CFR 888.3045 - Resorbable calcium salt bone void filler device	MBP	Filler, bone void, osteoinductive (w/o human growth factor)	II
		MQV	Filler, bone void, calcium compound	II

**PREDICATE DEVICES:** ETEX EquivaBone® Osteoinductive Bone Graft Substitute (K090855)  
Synthes® Norian® SRS® Bone Void Filler (K011897)

### DEVICE DESCRIPTION:

Vivorté BVFTM is a moldable, self-setting, gradually resorbable, calcium phosphate bone void filler with shaped particles of human bone that contain osteoinductive demineralized bone matrix (DBM). Vivorté BVFTM is indicated for use to fill bony voids or defects of the skeletal system (i.e., extremities, pelvis) that may be surgically created or osseous defects created from traumatic injury to the bone and only for bony voids or defects that are not intrinsic to the stability of the bony structure. Vivorté BVFTM may be manually applied to the bony defect or applied to the defect through a cannula. Vivorté BVFTM isothermically hardens *in vivo* to form a composite of a carbonated apatite (hydroxyapatite) and shaped particles of human bone that contain DBM. Vivorté BVFTM has a compressive and bending strength that is greater than that of human cancellous bone. The carbonated apatite (hydroxyapatite) which closely resembles the mineral phase of bone provides an osteoconductive scaffold and the shaped particles of human bone contain osteoinductive demineralized bone matrix (DBM). The composite device is gradually

resorbed and remodeled by the body as new bone formation occurs during the healing process. Vivorté BVFT<sup>TM</sup> is provided in various kit sizes corresponding to the amount of bone void filler produced when the components of the kit are mixed together.

Each lot of allograft human bone in the Vivorté BVFT<sup>TM</sup> is assayed for osteoinductive potential using an athymic mouse or rat model. The results of the osteoinductive potential testing may or may not be indicative of the osteoinductivity of Vivorté BVFT<sup>TM</sup> in humans.

#### **INTENDED USE AND INDICATIONS FOR USE:**

Vivorté BVFT<sup>TM</sup> is a moldable, self-setting, resorbable, calcium phosphate bone void filler with shaped particles of human bone that contain osteoinductive demineralized bone matrix (DBM). Vivorté BVFT<sup>TM</sup> is indicated for use to fill bony voids or defects of the skeletal system (i.e., extremities, pelvis) that may be surgically created or osseous defects created from traumatic injury to the bone and only for bony voids or defects that are not intrinsic to the stability of the bony structure. Vivorté BVFT<sup>TM</sup> may be manually applied to the bony defect or applied to the defect through a cannula. Vivorté BVFT<sup>TM</sup> is resorbed and remodeled by the body as new bone formation occurs during the healing process.

#### **BASIS FOR SUBSTANTIAL EQUIVALENCE:**

Vivorté BVFT<sup>TM</sup> is chemically and physically substantially equivalent to the ETEX EquivaBone<sup>®</sup> Osteoinductive Bone Graft Substitute device. Both of these devices are synthetic calcium phosphate based bone void fillers containing osteoinductive demineralized bone matrix. The Vivorté BVFT<sup>TM</sup> and the ETEX EquivaBone<sup>®</sup> Osteoinductive Bone Graft Substitute devices are both intraoperatively prepared by mixing similar components together to produce self-hardening calcium phosphate bone void fillers that, when implanted in a bony defect, are resorbed and remodeled by the body as new bone formation occurs during the healing process. Both devices have comparable mixing, handling/working, and setting times and, when fully hardened, are composed primarily of apatites that have similar chemical, physical, and mechanical characteristics and properties. The Vivorté BVFT<sup>TM</sup> device and the ETEX EquivaBone<sup>®</sup> Osteoinductive Bone Graft Substitute device have similar indications for use.

Vivorté BVFT<sup>TM</sup> is also chemically and physically substantially equivalent to the Synthes<sup>®</sup> Norian<sup>®</sup> SRS<sup>®</sup> Bone Void Filler. Both the Vivorté BVFT<sup>TM</sup> and the Synthes<sup>®</sup> Norian<sup>®</sup> SRS<sup>®</sup> Bone Void Filler are composed of synthetic calcium phosphate materials that are virtually identical; however, the Synthes<sup>®</sup> Norian<sup>®</sup> SRS<sup>®</sup> Bone Void Filler does not contain any demineralized bone matrix. Both the Vivorté BVFT<sup>TM</sup> and the Synthes<sup>®</sup> Norian<sup>®</sup> SRS<sup>®</sup> Bone Void Filler devices are intraoperatively prepared by mixing similar components together to produce self-hardening calcium phosphate bone void fillers that, when implanted in a bony defect, are resorbed and remodeled by the body as new bone formation occurs during the healing process. Both devices have comparable mixing, handling/working, and setting times; and both of these devices, when fully hardened, are composed primarily of hydroxyapatite that have similar chemical, physical, and mechanical characteristics and properties. The indications for use of the Vivorté BVFT<sup>TM</sup> and the Synthes<sup>®</sup> Norian<sup>®</sup> SRS<sup>®</sup> Bone Void Filler are similar with the

exception that the Synthes® Norian® SRS® Bone Void Filler does not contain DBM and therefore is not labeled as osteoinductive.

The Vivorté BVF™ and the ETEX and Synthes® predicate devices are provided packaged sterile and are intended as prescription use only single use devices.

#### Non-Clinical Testing

The following testing was performed to demonstrate substantial equivalency of Vivorté BVF™ to the predicate devices.

- Chemical, physical and mechanical testing
- Biocompatibility and toxicity (ISO 10993; ASTM; USP)
- Animal testing

#### Clinical Testing

Clinical testing was not necessary to determine substantial equivalence between Vivorté BVF™ and the predicate devices.



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration  
10993 New Hampshire Avenue  
Document Control Center - WO66-G609  
Silver Spring, MD 20993-0002

September 12, 2013

Vivoté, Incorporated  
% Peoples & Associates  
Stephen J. Peoples, VMD, MS  
5010 Lodge Pole Lane  
Fort Wayne, Indiana 46814

Re: K130703

Trade/Device Name: Vivoté BV<sup>TM</sup>

Regulation Number: 21 CFR 888.3045

Regulation Name: Resorbable calcium salt bone void filler device

Regulatory Class: Class II

Product Code: MBP, MQV

Dated: June 26, 2013

Received: July 10, 2013

Dear Dr. Peoples:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); good manufacturing practice requirements as set

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forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act): 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address <http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to <http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm> for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address <http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>.

Sincerely yours,

Ronald P. Jean -S for

Mark N. Melkerson  
Director  
Division of Orthopedic Devices  
Office of Device Evaluation  
Center for Devices and  
Radiological Health

Enclosure

**Indications for Use Statement**

510(k) Number: K130703

**Device Name:** Vivorté BVFTM

**Indications for Use:**

Vivorté BVFTM is a moldable, self-setting, gradually resorbable, calcium phosphate bone void filler with shaped particles of human bone that contain osteoinductive demineralized bone matrix (DBM). Vivorté BVFTM is indicated for use to fill bony voids or defects of the skeletal system (i.e., extremities, pelvis) that may be surgically created or osseous defects created from traumatic injury to the bone and only for bony voids or defects that are not intrinsic to the stability of the bony structure. Vivorté BVFTM may be manually applied to the bony defect or applied to the defect through a cannula. Vivorté BVFTM is gradually resorbed and remodeled by the body as new bone formation occurs during the healing process.

Prescription Use X AND/OR Over-The-Counter Use \_\_\_\_\_  
(Part 21 CFR 801 Subpart D) (21 CFR 801 Subpart C)

**(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF  
NEEDED)**

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Concurrence of CDRH, Office of Device Evaluation (ODE)

**Laurence D. Coyne -S**

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(Division Sign-Off)  
Division of Orthopedic Devices  
510(k) Number: K130703